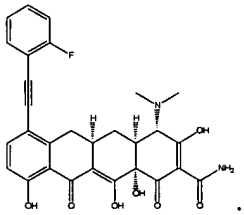
REMARKS

Claims 1-88 were pending. Claim 89 was added. Therefore, claims 1-89 will be pending upon entry of the present amendment.

No new matter was added. Support for new claim 89 can be found, for example, in claim 87 as originally pending and in the specification as originally filed in Table 2, page 49, compound BY.

Response to Restriction Requirement

The Examiner found that Claim 1 is directed to a plurality of patentably distinct species comprising X and R7. Applicants are required under 35 U.S.C. § 121 to elect a single disclosed species. Applicants elect, without traverse, the species:



Claims which read on this species include 1-3, 51-54, 72, and 74-89. It is Applicants' understanding that the species election is for searching purposes only, and upon a finding of allowability of the elected species, the remaining species also will be searched.

SUMMARY

It is respectfully submitted that this application is in condition for allowance. If there are any remaining issues or the Examiner believes that a telephone conversation with Applicants' Attorney would be helpful in expediting prosecution of this application, the Examiner is invited to call Elizabeth A. Hanley at (617) 227-7400.

Date: March 12, 2003

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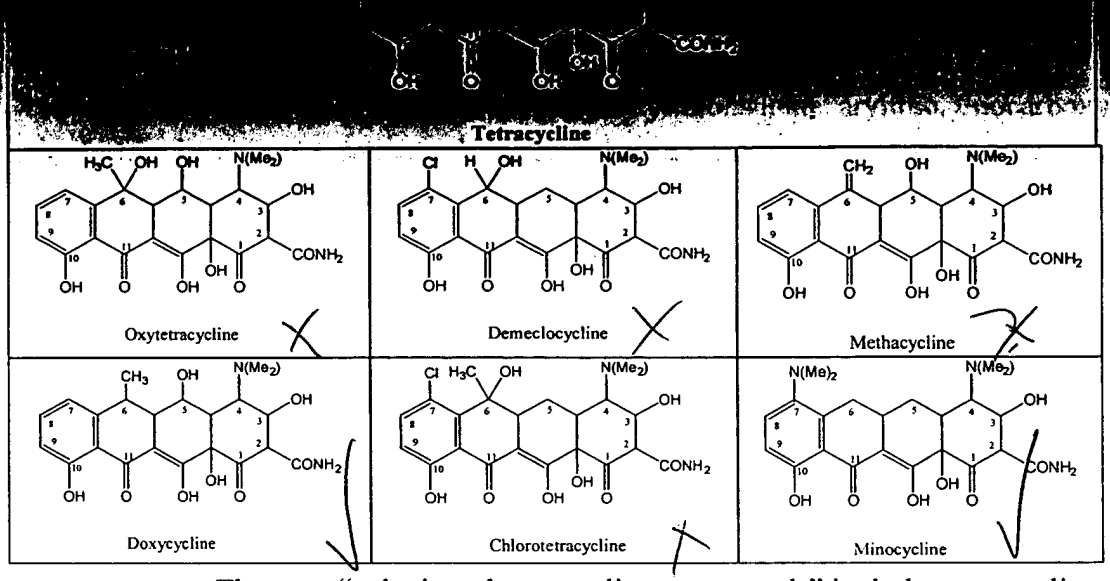

The term "substituted tetracycline compounds" includes tetracycline compounds with substitution at the 7- or 9- position. In one embodiment, the substitution at the 7- or 9- position enhances the ability of the substituted tetracycline compound to perform its intended function. In an embodiment, the 9- substituted tetracycline compound is 9- substituted minocycline (*e.g.*, wherein R^4 and $R^{4'}$ are methyl, R^5 is hydrogen, R^7 is dimethyl amino, and X is $CR^6R^{6'}$, wherein both R^6 and $R^{6'}$ are hydrogen atoms); 7- or 9- substituted doxycycline (*e.g.*, wherein R^4 and $R^{4'}$ are methyl, R^5 is hydroxyl, X is $CR^6R^{6'}$, R^6 is methyl and $R^{6'}$ is hydrogen); or a 7- or 9- substituted sancycline (wherein R^4 and $R^{4'}$ are methyl; R^5 is hydrogen, X is $CR^6R^{6'}$, R^6 and $R^{6'}$ are hydrogen atoms). In a further embodiment, R^5 may be a protected hydroxyl group, *e.g.*, a prodrug moiety. Examples of prodrug moieties include, for example, acyl esters and propionoic acid esters. In certain embodiments, the prodrug moiety is aroyl, alkanoyl, or alkaroyl and may or may not be cleaved *in vivo* to the hydroxyl group. In an embodiment, $R^{2'}$, R^3, R^8, R^{10}, R^{11}, and R^{12} are each hydrogen. In certain embodiments of the invention, the term substituted tetracycline compounds includes tetracycline compounds wherein least one of R^7 or R^9 is heteroaryl-amino, $NR^{7c}C(=W')WR^{7a}$, or $NR^{9c}C(=Z')ZR^{9a}$.

The term "9-substituted tetracycline compounds" includes, in one embodiment, compounds wherein R^9 is amino-heteroaryl or $NR^{9c}C(=Z')ZR^{9a}$. In a further embodiment, R^{9c} is hydrogen. In another, Z' is oxygen or sulfur. In an embodiment, Z is oxygen or NR^{9b}